Short Form Work Paper WPSDGENRHC0027

**Revision 1**

**San Diego Gas & Electric**

**Energy Efficiency Engineering**

**Economizer Repair for Package AC**

**April 26, 2019**

**SDG&E Economizer Repair for Package AC**

# Introduction

This short form workpaper documents the values adopted from PGE’s workpaper entitled “Economizer Repair” (PGE3PHVC151 Revision 5). SDG&E adopts all the values in PGE3PHVC151 Revision 5, with the following exceptions:

1. Measure Application Type was adjusted to BRO-RCx from Retro-Commissioning (RC)

## Document Revision History

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| --- | --- | --- | --- |
| **Rev** | **Date** | **Author** | **Summary of Changes** |
| 0 | 06/30/2014 | Kyle Dunn (MWE2) | Original Workpaper for release, adapted from PGE3PHVC152 R0 |
| 1 | 04/26/2019 | Keith Valenzuela (AESC) | Created short form workpaper to adopt PGE3PHVC151 Revision 5. SDG&E has included all IOU/PA energy impacts which were obtained from PG&E’s workpaper technical support vendor. |
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## Measure Summary

Table 1: Measure Summary Table

| **Section** | **Value** |
| --- | --- |
| **1.1 Measure & Baseline Data** | Please reference PGE3PHVC151 Revision 5 Section 1.1 Measure Description & Background. |
| **1.2 Technical Description** | Please reference PGE3PHVC151 Revision 5 Section 1.2 Technical Description |
| Measures | Measures and Codes   |  |  |  |  |  | | --- | --- | --- | --- | --- | | SDG&E | SCE | PG&E | **Measure Name** | **Measure Number (WPSDGENRHC0027-Rev01-MsrXXX** | | 467055  467056 |  | HV307 | Economizer Repair (ADEC) on AC Only Units | Msr001 | | 467057  467058 |  | HV306 | Economizer Repair (ADEC) on AC Unit with Gas Heat | Msr002 | | 467059  467060 |  | HV308 | Economizer Repair (ADEC) on Heat Pump | Msr003 | | 467061  467062 |  | HV309 | Economizer Repair (ADEC) on Variable Volume AC Unit with Gas Heat | Msr004 | | 467063  467064 |  | HV303 | Economizer Repair (Non-ADEC) on AC Only Units | Msr005 | | 467065  467066 |  | HV302 | Economizer Repair (Non-ADEC) on AC Unit with Gas Heat | Msr006 | | 467067  467068 |  | HV304 | Economizer Repair (Non-ADEC) on Heat Pump | Msr007 | | 467069  467070 |  | HV305 | Economizer Repair (Non-ADEC) on Variable Volume AC Unit with Gas Heat | Msr008 |   Note: SDG&E has two measure codes per measure to account for each available delivery type (Direct Install and Downstream Incentive) |
| Code for All Measures | Please reference PGE3PHVC151 Revision 5 Section 1.4.2 Codes and Standards Analysis |
| Requirements | Please reference PGE3PHVC151 Revision 5 Section 1.1 Measure Description & Background. |
| **1.3 Installation Type and Delivery Mechanisms** | |
| Installation Type | Measuree Application Type: Bro-RCx |
| Delivery Mechanisms | Please reference PGE3PHVC151 Revision 5 Section 1.3 Installation Type and Delivery Mechanisms  Downstream Deemed : DnDeemed  Downstream Deemed Direct Install: DnDeemDI |
| **1.4 DEER Data** | |
| Net-to-Gross Ratio | Please reference PGE3PHVC151 Revision 5 Section 1.4.1 DEER Data  NTG ID = NonRes-sAll-mHVAC-RCA = 0.73 |
| Effective and Remaining Useful Life | Please reference PGE3PHVC151 Revision 5 Section 1.4.1 DEER Data  Effective Useful Life (EUL) ID: NonRes-RCx-Operational (3yrs)  Remaining Useful Life (RUL) ID: NonRes-RCx-Operational (1yr) |
| GSIA | Please reference PGE3PHVC151 Revision 5 Section 1.4.1 DEER Data  GSIA ID: Def-GSIA |
| **Section 2. Calculation Methodology** | |
| Energy Savings/Peak Demand Reduction – All Measures | Please reference PGE3PHVC151 Revision 5 Section 2 Calculation Methodology |
| **Section 3. Load Shapes** | |
| Load Shape | Please reference PGE3PHVC151 Revision 5 Section 3 Load Shapes |
| **Section 4. Cost** | |
| **Section 4.1 Base and Measure Costs** | |
| Base Cost | Please reference PGE3PHVC151 Revision 5 Section 4.1 Base Case Cost  The base case is the customer’s existing equipment; therefore, the base case cost is $0.00. |
| Measure Cost | Please reference PGE3PHVC151 Revision 5 Section 4.2 Measure Case Cost for how measure cost estimates were determined.  SDG&E adopts all cost but created SDG&E measure cost IDs for reporting purposes. SDG&E measure cost IDs are included in Ex-Ante tables submission.   |  |  |  |  | | --- | --- | --- | --- | | SDG&E  Implementation ID | **Measure Name** | **SDG&E**  **Measure Cost ID** | **Measure Cost Value (or IMC)** | | 467055  467056 | Economizer Repair (ADEC) on AC Only Units | SDG-dxAC-Com-nonadec-econrepair | $50.00 | | 467057  467058 | Economizer Repair (ADEC) on AC Unit with Gas Heat | SDG-dxAC-Com-nonadec-econrepair | $50.00 | | 467059  467060 | Economizer Repair (ADEC) on Heat Pump | SDG-dxAC-Com-nonadec-econrepair | $50.00 | | 467061  467062 | Economizer Repair (ADEC) on Variable Volume AC Unit with Gas Heat | SDG-dxAC-Com-nonadec-econrepair | $50.00 | | 467063  467064 | Economizer Repair (Non-ADEC) on AC Only Units | SDG-dxAC-Com-adec-econrepair | $126.48 | | 467065  467066 | Economizer Repair (Non-ADEC) on AC Unit with Gas Heat | SDG-dxAC-Com-adec-econrepair | $126.48 | | 467067  467068 | Economizer Repair (Non-ADEC) on Heat Pump | SDG-dxAC-Com-adec-econrepair | $126.48 | | 467069  467070 | Economizer Repair (Non-ADEC) on Variable Volume AC Unit with Gas Heat | SDG-dxAC-Com-adec-econrepair | $126.48 | |